its readers the pleasure of becoming acquainted with his memoir *in extenso*, through a translation, we shall here restrain ourselves to giving, in the author's own words, the general conclusions with which he sums up the most important results of his careful studies on the subject.

1. During the Postpliocene epoch Brazil was inhabited by a very rich mammalian fauna, of which the recent one might almost be said to be a mere fraction or a crippled remnant, as many of its genera, even families and suborders, have vanished, and very few been added in more recent times.

2. During the whole postpliocene epoch the Brazilian mammalian fauna had the same peculiar character which now distinguishes the South American fauna, compared with that of the old world; the extinct genera belonging to groups and families, that this very day are peculiarly characteristic of South America. Only two of its genera, the one extinct (mastodon), the other still living (the horse), belong to families that in our epoch are limited to the Eastern hemisphere.

3. All the mammalian orders were not in the same degree richer in genera in former times than now. The Bruta (Sloths, etc.), Pecora (Horse, Sheep, etc.), Proboscidea (Elephants), and lastly the Feræ have relatively suffered the greatest losses. Some orders, for instance the Chiroptera (Bats) and Simiæ (Monkies), perhaps contain even more genera now than formerly.

4. The Postpliocene mammalian fauna of South America differed much more from the modern one, and was especially more rich in peculiar, now extinct, genera, than the corresponding fauna of the old world.

5. The scantiness of great mammalia, one might say the dwarf-like stamp impressed upon the South American mammalian fauna of our day, compared with that of the Eastern hemisphere, was much less distinct, or rather failed altogether in the prehistorical fauna. The Postpliocene Mastodons and Toxodonts of Brazil, its many gigantic Armadillos and Sloths, could well rival the Elephant, Rhinoceros, and Hippopotamus, which, during the same period, roamed over the soil of Europe. — C. F. LÜTKEN, *Copenhagen, Feb.* 14, 1868.

ENTOMOLOGICAL CALENDAR.

IN June we have found that beautiful butterfly *Militæa Phaëton* rising from the low cold swamps. Its larva (Fig. 1) transforms early in June or the last week in May, into a beautiful chrysalis (Fig. 2). The larva hybernates through the winter, and may be found early in spring feeding on the leaves of the Aster, the Viburnum dentatum, and Hazel. It is black and deep orange-red, with long thick-set black spines.

The Currant-borer, *Trochilium tipuliforme*, a beautiful, slender, agile,

deep-blue moth, with transparent wings, flies the last of the month about currant bushes, and its chrysalids may be found in May in the stems. The ravages of the Currant-moth, *Abraxas? ribeāria*, begin soon after the leaves are out. Among moths, that of the American Tent-caterpillar flies during the last of June and July, and its white cocoons can be detected under bark, and in sheltered parts of fences and outhouses.

Fig. 2.

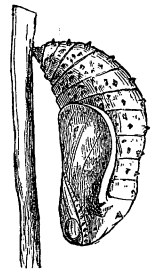
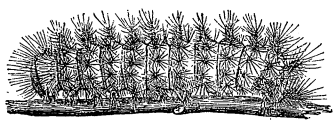


Fig. 1.



Among others of the interesting family of the Silkworms, Bombycidæ, are Lithosia, Crocota, and its allies, which fly in the daytime, and the different species of Arctia, and the white arctians, Spilosoma, and Leucarctia, the parent of the Salt-marsh Caterpillar.

Many Leaf-rollers, *Tortrices*, are rolling up leaves in various ways for their habitations, and to conceal them from too prying birds; and hosts of young Tineans are now mining leaves, and excavating the interior of seeds and various fruits. Grape-growers should guard against the attacks of a species of Tortrix which rolls the leaves of the grape, and of a Tinean, probably a species of *Gelechia*, which, according to Mr. M. C. Reed, of Hudson, Ohio, "in midsummer deposits its eggs in the grape; a single egg in a grape. Its presence is soon indicated by a reddish color on that side of the yet green grape, and on opening it, the winding channel opened by the larva in the pulp is seen, and the minute worm, which is white, with a dark head, is found at the end of the channel. It continues to feed upon the pulp of the fruit, and when it reaches the seeds, eats out their interior; and if the supply from one grape is extinguished before its growth is completed, it fastens this to an adjoining grape with a web, and burrows into it. It finally grows to about one half of an inch in length, becomes brown, almost black, the head retaining its cinnamon color. When it leaves the grape it is very active, and has the power of letting itself down by a thread of silk. All my efforts to obtain the cocoons failed until I placed fresh grape-leaves in the jar containing the imported grapes. The larvæ immediately betook themselves to these, and, cutting a curved line through the leaf thus), sometimes two lines thus ( ), folded the edge or edges over, and in the fold assumed the chrysalis form. From specimens saved, I shall hope to obtain the perfect insect this season, and perhaps obtain information which will aid in checking its increase. Already it is so abundant that it is necessary to examine every branch of ripe grapes, and clip out the infested berries before sending them to the table. A rapid increase in its numbers would interfere seriously with the cultivation of the grape in this locality."

The Rose-beetle, *Macrodactyla subspinosa*, appears in great abundance. The various species of *Buprestis* are abundant; among them are the

Peach-borer, *Dicerca divaricata*, found flying now about peach and cherry trees; *Chrysobothris fulvoguttata*, and *C. Harrisii*, about white pines. The large weevil, *Arrhenodes septentrionalis*, which lives under the bark of the white oak, appears in June and July. The Chinch-bug begins its terrible ravages in the wheat-fields. The various species of *Chrysopa*, or Lace-winged flies, appear during this month.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

ACADEMY OF NATURAL SCIENCES. *Philadelphia, Feb.* 6, 1868. (*Conchological Section.*)—A paper was read by Dr. James Lewis on the distribution of shells in some parts of New York. Mr. W. M. Gabb remarked on shell collecting in Lower California. Dr. Beadle spoke on the great abundance of *Helix desertorum* in the deserts of Sinai.

March 5.—Dr. E. I. Nolan spoke of the irridescence of *Latirus prismaticus*. This shell, when immersed in water, exhibits a beautiful irridescent display of colors, purple predominating, on the entire surface. On microscopic examination he had found that the surface was everywhere covered with an exceedingly fine network of lines, and suggested that the expansion of these lines in water might so decrease the spaces between them as to cause the rays of light falling upon the surfaces to be refracted, thus producing the irridescence observed.

BOSTON SOCIETY OF NATURAL HISTORY. *November* 6, 1867.—Dr. B. G. Wilder made some remarks upon the want of perfect symmetry in the leaves of elms and hop-hornbeams. Professor Agassiz brought forward the results of an examination of the skulls of the American bison and the European aurochs. By means of specimens exhibited, he pointed out the distinctions he had noticed in the two skulls, and stated that these differences were such as to characterize them clearly as distinct species. Professor Agassiz also exhibited the skull of a species of dolphin new to America, discovered upon the coast of Nantucket. The animal was sixteen feet in length.

Nov. 27.—Mr. S. H. Scudder exhibited a curious specimen of "walking-stick" found in this vicinity. One of the fore-legs had been lost in early life and replaced by a new one less than one quarter the length of the other fore-leg. Mr. Trouvelot states that this replacement of the leg can only take place previous to the third moult; the leg was almost perfectly formed, although one of the tarsal joints was wanting, and the foot was unprovided with claws or the usual foot-pad.

Among a number of interesting specimens, Mr. F. G. Sanborn exhibited a dragon-fly with a singular malformation or arrest of development in one wing,—the outer half being abortive,—and the cast-off skin of a young grasshopper impaled on a needle of pine. Specimens like the last were frequently found on leaves of pine or blades of grass, the leaf passing